REMARKS/ARGUMENTS

In the Final Office Action mailed December 2, 2009, claims 1-20 were rejected. In response, Applicant proposes amending claims 3 and 19 to improve readability of the claims. For reference, claim 2 was canceled in a previous response. Applicant submits that the proposed amendments should be entered to put the claims in condition for allowance or to put the claims in better condition for appeal. Applicant hereby requests reconsideration of the application in view of the proposed amendments and the below-provided remarks.

Claim Rejections under 35 U.S.C. 102 and 103

Claims 1, 8-12, 15-17, and 19-20 were rejected under 35 U.S.C. 102(e) as being anticipated by Kommerling et al. (U.S. Pat. No. 7,005,733, hereinafter Kommerling). Additionally, claims 1-7 and 14 were rejected under 35 U.S.C. 103(a) as being obvious over Sano (JP 3084959 A) in view of Kommerling. Additionally, claim 13 was rejected under 35 U.S.C. 103(a) as being obvious over Kommerling in view of Fujiki et al. (JP 7209019 A, hereinafter Fujiki). Additionally, claims 17-18 were rejected under 35 U.S.C. 103(a) as being obvious over Kommerling in view of Double et al. (U.S. Pat. No. 5,129,629, hereinafter Double). However, Applicant respectfully submits that these claims are patentable over Kommerling, Sano, Fujiki, and Double for the reasons provided below.

Independent Claim 1

Claim 1 recites in part:

"a detection circuit adapted to detect the magnetic state of the magnetically-responsive circuit nodes and, in response to a change in the magnetic state, to detect that the package has been tampered with." (emphasis added)

In response to the rejection under 35 U.S.C. 102, Kommerling does not disclose a circuit adapted to detect a magnetic state and, in response to a change in the magnetic state, to detect that the package has been tampered with. Kommerling merely discloses a

cryptographic input unit that forms a cryptographic key from detected property outputs of sensors responsive to encapsulation properties (Kommerling, col. 5, lines 54-59). However, the cryptographic input unit of Kommerling forms the cryptographic key regardless of whether or not the encapsulation is tampered with. The cryptographic input unit merely forms a different cryptographic key if the encapsulation properties are changed. However, during the process of forming the key no tampering is detected. If there were no request by the CPU to access the memory, the altered key would not even be used, and the circuit of Kommerling would not be able to detect that the encapsulation has been tampered with. The key is only used when the CPU requests access to the memory and the key is then used to decrypt data from the memory (Kommerling, col. 6, lines 4-16). Even then the circuit would not detect that the encapsulation has been tampered with. Rather, the circuit would just no longer correctly decrypt the encrypted data from the memory. Even if the incorrectly decrypted data were understood as detecting tampering, the detection would not be in response to a change in magnetic properties of the encapsulation, but in response to a request by the CPU to access the memory.

For the reasons presented above, Kommerling does not disclose all of the limitations of the claim because Kommerling does not disclose a circuit adapted to detect a magnetic state and, in response to a change in the magnetic state, to detect that the package has been tampered with, as recited in the claim. Accordingly, Applicant respectfully asserts that claim 1 is not anticipated by Kommerling because Kommerling does not disclose all of the limitations of the claim.

In response to the rejection under 35 U.S.C. 103, the Final Office Action admits that Sano does not teach a plurality of magnetically-responsive circuit nodes and a package adapted to inhibit access to the integrated circuit device and including a plurality of magnetized particles therein. Further, the Final Office Action admits that Sano does not disclose detecting tampering when a change in magnetic field is detected (Final Office Action, page 8). The Final Office Action cites Kommerling as teaching an integrated circuit having Hall effect sensors disposed covering all circuit-containing areas and an encapsulation surrounding a device substrate on both sides and comprising an

epoxy resin matrix. The Final Office Action concludes that replacing the detachable magnet of Sano with the epoxy resin matrix, the permanent magnets, and the Hall elements of Kommerling would yield predictable results such as protecting the integrated circuit device from tampering (Final Office Action, page 8). However, Applicant respectfully disagrees because such modification would undermine the purpose of the Sano reference.

As consistent with relevant case law and the M.P.E.P., there is no motivation to modify a reference where the modification would undermine or defeat the purpose of the reference (see, for example, *In re Gordon*, 733 F.2D 900, 221 USPQ 1125 (Fed. Cir. 1984)). An object of the Sano reference is to set an operating mode of a circuit without installing a proprietary terminal by using a detachable magnet, a Hall element, and a mode changeover circuit. Sano further teaches a device to instruct a mode changeover when a Hall element detects a magnetic field from a detachable magnet (Sano, Abstract).

The Final Office Action attempts to modify Sano with the epoxy resin matrix, the magnets, and the Hall elements of Kommerling. Applicant submits that such a modification would render the Sano reference inoperable for its stated purpose. The Sano reference teaches that a magnet is installed at the outside of the package so as to be freely detachable and further teaches that a mode changeover circuit instructs a mode changeover when a magnetic field is detected by the Hall element (Sano, Abstract).

Applicant submits that if the detachable magnet of Sano is replaced with the epoxy resin matrix and permanent magnets of Kommerling, the device of Sano would not be able to change the operating mode of the circuit because adding an epoxy resin matrix and permanent magnets to protect against tampering would require the resin and magnets to be permanently attached to the integrated circuit. Thus the device of Sano as modified by Kommerling would not allow the operating mode of the circuit to be changed because in order to change the operating mode a freely detachable magnet is required. Furthermore, the particles within the matrix of the device of Kommerling work in conjunction with the fixed permanent magnets to distort the field lines of the magnetic field from the permanent magnets (Kommerling, col. 10, lines 53-67), and therefore, removing the particles and/or permanent magnets would result in a device that does not protect against tampering. Further, any attempt to provide an additional detachable

magnet would change the magnetic field and therefore interfere with the properties detected by the Hall elements. Thus, replacing the freely detachable magnet of Sano with the epoxy resin matrix, permanent magnets, and hall elements of Kommerling would render the proposed modification inoperable.

For the reasons presented above, the combination of Sano and Kommerling is improper because the combination would undermine or defeat the purpose of the reference. Accordingly, Applicant respectfully asserts that a *prima facie* case of obviousness has not been established with respect to claim 1, and Applicant requests the rejection of claim 1 be withdrawn.

Independent Claim 15

Applicant respectfully asserts that independent claim 15 is not anticipated by Kommerling at least for similar reasons to those stated above in regard to the rejection of independent claim 1. In particular, claim 15 recites "a tamper-protection circuit adapted to detect the logic state of the at least some of the plurality of magnetically-responsive memory elements and, in response to the detected logic state changing, detecting that the package has been tampered with" (emphasis added).

Here, although the language of claim 15 differs from the language of claim 1 and the scope of claim 15 should be interpreted independently of claim 1, Applicant respectfully asserts that the remarks provided above in regard to the rejection of claim 1 also apply to the rejection of claim 15. Accordingly, Applicant respectfully asserts claim 15 is not anticipated by Kommerling because Kommerling does not disclose a circuit adapted to detect a logic state of magnetically-responsive memory elements and, in response to the detected logic state changing, detecting that the package has been tampered with.

Independent Claim 16

Applicant respectfully asserts independent claim 16 is not anticipated by Kommerling at least for similar reasons to those stated above in regard to the rejection of independent claim 1. In particular, claim 16 recites "a tamper-protection circuit adapted to detect the magnetic response of the at least one magnetically-responsive element and,

in response to the detected magnetic response changing, detecting that the package has been tampered with" (emphasis added).

Here, although the language of claim 16 differs from the language of claim 1 and the scope of claim 16 should be interpreted independently of claim 1, Applicant respectfully asserts that the remarks provided above in regard to the rejection of claim 1 also apply to the rejection of claim 16. Accordingly, Applicant respectfully asserts claim 16 is not anticipated by Kommerling because Kommerling does not disclose a circuit adapted to detect a magnetic response of at least one magnetically-responsive memory element and, in response to the detected magnetic state changing, detecting that the package has been tampered with.

Independent Claim 19

Applicant respectfully asserts independent claim 19 is not anticipated by Kommerling at least for similar reasons to those stated above in regard to the rejection of independent claim 1. In particular, claim 19 recites "detecting a magnetic state of a plurality of magnetically-responsive circuit nodes [...] and in response to detecting a change in the magnetic state of the plurality of magnetically-responsive circuit nodes, detecting that the integrated circuit device has been tampered with" (emphasis added).

Here, although the language of claim 19 differs from the language of claim 1 and the scope of claim 19 should be interpreted independently of claim 1, Applicant respectfully asserts that the remarks provided above in regard to the rejection of claim 1 also apply to the rejection of claim 19. Accordingly, Applicant respectfully asserts claim 19 is not anticipated by Kommerling because Kommerling does not disclose detecting a magnetic state and, in response to detecting a change in the magnetic state, detecting that the integrated circuit device has been tampered with.

Dependent Claims 3-14, 17-18, and 20

Claims 3-14, 17-18, and 20 depend from and incorporate all of the limitations of the corresponding independent claims 1, 16, and 19. Applicant respectfully asserts claims 3-14, 17-18, and 20 are allowable based on allowable base claims. Additionally,

each of claims 3-14, 17-18, and 20 may be allowable for further reasons, as described below.

In regard to claim 3, Applicant respectfully submits that claim 3 is patentable over the combination of Sano and Kommerling because the combination of cited references does not teach or suggest all of the limitations of the claim. Claim 3 recites a circuit adapted to "compare the detected magnetic state with a reference state and to detect tampering with the package in response to the detected magnetic state being different than the reference state" (emphasis added). In contrast, Sano and Kommerling do not teach or suggest detecting that the package has been tampered with in response to the detected magnetic state being different than the reference state, as described above with reference to claim 1. Accordingly, Applicant respectfully asserts that claim 3 is patentable over Sano and Kommerling because Sano and Kommerling do not teach a circuit adapted to "compare the detected magnetic state with a reference state and to detect tampering with the package in response to the detected magnetic state being different than the reference state," as recited in claim 3.

In regard to claims 4 and 5, Applicant respectfully submits that claims 4 and 5 are patentable over the combination of Sano and Kommerling because the combination of cited references does not teach or suggest all of the limitations of the claims. Claim 4 recites a memory "adapted to store data representative of an untampered magnetic state of the magnetically-responsive circuit nodes, wherein the comparison circuit is adapted to compare the data stored in the memory with the detected magnetic state and to detect tampering with the package in response to the data stored in the memory indicating a different magnetic state than the detected magnetic state" (emphasis added). In contrast, Sano and Kommerling do not teach or suggest detecting that the package has been tampered with in response to the data stored in the memory indicating a different magnetic state than the detected magnetic state, as described above with reference to claim 1. Furthermore, the combination of Sano and Kommerling does not teach or suggest a memory adapted to store data representative of an untampered magnetic state. Sano merely instructs a mode changeover in response to a magnetic field (Sano, abstract), but does not teach or suggest that an initial state is stored. Kommerling merely teaches that an encryption key is provided from detected property output signals (Kommerling,

col. 5, lines 3-5), but does not teach or suggest that an untampered magnetic state is stored. Accordingly, Applicant respectfully asserts that claim is patentable over Sano and Kommerling because Sano and Kommerling do not teach a memory adapted to "store data representative of an untampered magnetic state of the magnetically-responsive circuit nodes," as recited in claim 4. Claim 5 is dependent on claim 4 and is patentable over Sano and Kommerling at for the reasons stated above with reference to claim 4.

In regard to claim 6, Applicant respectfully submits that claim 6 is patentable over the combination of Sano and Kommerling because the combination of cited references does not teach or suggest all of the limitations of the claim. Claim 6 recites that the device is adapted to "alter data stored in the integrated circuit in response to the comparison circuit detecting tampering with the package" (emphasis added). In contrast, Sano and Kommerling do not teach or suggest that an integrated circuit is adapted to alter data stored in the integrated circuit in response to detecting tampering. The Final Office Action asserts on page 11 that Sano does not teach that the integrated circuit device is adapted to alter data stored in the integrated circuit. Additionally, Kommerling does not teach or suggest altering data stored in the integrated circuit in response to detecting tampering with the package. In fact, Kommerling does not teach detecting tampering with the package, as described above with reference to claim 1. Furthermore, Kommerling does not teach or suggest that data stored in the integrated circuit is altered in response to detecting tampering (emphasis added). Kommerling merely teaches that a key is formed from a plurality of property outputs (Kommerling, col. 5, lines 52-59). In Kommerling, the key is provided by a cryptographic unit at the time the CPU core requests data from the memory (Kommerling, col. 6, lines 4-16), but if no such request is given, the key will remain the same until the next request, independent of the state of the encapsulation. Therefore, the key as disclosed by Kommerling will not change in response to tampering of the encapsulation (emphasis added). Accordingly, Applicant respectfully asserts that claim 6 is patentable over Sano and Kommerling because Sano and Kommerling do not teach that the device is adapted to "alter data stored in the integrated circuit in response to the comparison circuit detecting tampering with the package," as recited in claim 6.

In regard to claim 7, Applicant respectfully submits that claim 7 is patentable over the combination of Sano and Kommerling because the combination of cited references does not teach or suggest all of the limitations of the claim. Claim 7 recites that the device is adapted to "<u>set a tamper-detection flag in response to</u> the comparison circuit <u>detecting tampering</u>" (emphasis added). In contrast, Sano and Kommerling do not teach or suggest detecting tampering, as described above with reference to claim 1. Accordingly, Applicant respectfully asserts that claim 7 is patentable over Sano and Kommerling because Sano and Kommerling do not teach that the device is adapted to "set a tamper-detection flag in response to the comparison circuit detecting tampering," as recited in claim 7.

CONCLUSION

Applicant respectfully requests reconsideration of the claims in view of the amendments and remarks made herein. A notice of allowance is earnestly solicited.

At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account **50-4019** pursuant to 37 C.F.R. 1.25. Additionally, please charge any fees to Deposit Account **50-4019** under 37 C.F.R. 1.16, 1.17, 1.19, 1.20 and 1.21.

Respectfully submitted,

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